

# PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

### Improvements in Teat Cups of Milking Machines.

I, WILLIAM CAPIL, Invercargill, New Zealand, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to teat cups of milking machines and especially those that are operated by atmospheric pressure and vacuum, alternately, and commonly used in most types of present day milking machines. I propose to make my improvement in three ways.

First, an attachment fitted to the top of existing teat cups.

Second, a complete new rubber inflation with my improvement combined with the inflation at the top end.

Third, a complete new teat cup including an improved rubber inflation, with my stripping attachment combined. I am aware that there are many teat cups of various shapes on the world's markets, with inflations to suit the intentions of the designer. My improvement marks a distinct new principle in the operation and shape of teat cups, whereby it is capable of performing the function of milking cow's teats, and also during the process performing the added operation of automatically stripping the udder, and thereby rendering hand stripping practically unnecessary.

All teat cups in general throughout the world are made on the one principle and their only difference lies in their construction and accessibility for cleaning as well as for securing the rubber inflations. The movement is simply a squeeze and release. My invention has all the advantages of any previous cup, but has in addition an entirely new action namely an up and down movement operating at the same time, as the ordinary pulsations usual in teat cups of milking machines. This up and down movement has never been known before and is an exact reproduction of the movement of the hand when used for milking cows.

In accordance with the present invention a milking machine teat cup embodies an exterior length of rubber tube adapted

to receive the teat and having one or more rings inserted therein to form corrugations and a tubular rubber inflation disposed interiorly of said cup.

For the purpose of more fully describing the nature of this invention reference will now be made to the accompanying drawing wherein:—

Fig. 1 is a sectional view of a rubber inflation in accordance with one embodiment of the invention.

Fig. 2 is a sectional view of the inflation shown in Fig. 1 embodied in a teat cup.

Fig. 3 is a view of a modification of my invention applicable for attachment to an ordinary teat cup of a milking machine.

Fig. 4 shows the modification illustrated in Fig. 3 in contact with the teat during the stripping action.

In Figs. 1 and 2 A represents the rubber inflation and B a ring inserted in the inflation at the desired point. C represents a ring at top end to make the said end of inflation suitable for attaching to the cow's teat.

When A is ready for insertion in teat cup it will be of the shape shown in Fig. 1. In Fig. 2 the inflation A is shown in a metal teat cup ready for use in a milking machine outfit. The complete cup as shown is made up of a nipple D, a cap E, and main casing F. The inflation A is inserted in the casing F, and turned back over it at the bottom end as shewn. The nipple D is laid on top of the turned back end of A and the cap E passed over the nipple and screwed on to casing F. This operation causes the nipple D to make an airtight joint on the adjacent face of casing F. Fig. 3 shows a teat cup embodying a rubber tube G similar to the upper end of the inflation A, as in Fig. 1, but adapted to fit over the outside of an ordinary teat cup such as H of any milking machine. The action of the tube G in this case is the same as in Figs. 1 and 2, while its shape during the stripping process is shown in Fig. 4. The vacuum operating on the rubber inflation in the teat cup expands the said inflation towards the wall of the cup and communicates the suc-

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tion on the inside of the inflation upwards to draw the corrugations together. Air is subsequently admitted to the outside of the inflation and into the corrugation whereupon the cup gives a downward pull to the teat and the inflation returns to its previous position. This action produces milking as a result.

While milking is going on the shape of the top of the inflation or of the upper extension to the teat cup combined with the alternate admission of air and vacuum causes an up and down movement of the cup, (see round dotted lines in Figure 4). In this Figure the corrugation B is shown as rising until it meets C at J. This causes the cow's teat to enter deeper into the inflation in the cup and at the same time the part K of the inflation or extension is narrowed, thereby pressing the cow's teat and producing with the up and down motion an action which strips the cow's teat and obtains the extra milk from the cow at the end of milking operations, which is usually obtained by hand milking or stripping as it is called in dairying language.

L is an air vent between the rings or corrugations B and C to allow air from outside to enter into the inflation to adjust the tension of rubber gripping the cow's teat.

Having now particularly described and ascertained the nature of my said inven-

tion and in what manner the same is to be performed, I declare that what I claim is:—

1. A milking machine teat cup embodying an exterior piece of rubber tube adapted to receive the teat and having a ring inserted to form a corrugation for the purpose specified and a tubular rubber inflation disposed interiorly of said cup.

2. A milking machine teat cup as set forth in claim 1 in which a plurality of rings are inserted in the rubber tube to form corrugations in said tube for the purpose specified.

3. A milking machine teat cup as set forth in either of the preceding claims in which the teat cup carries a separate rubber extension tube at the upper end, said rubber extension having a plurality of rings to form corrugations therein for the purpose specified.

4. A milking machine teat cup as set forth in claims 1 or 2 in which the rubber inflation is formed integrally with the ring carrying tube and is secured inside the teat cup by being turned over at the bottom and suitably held.

5. A milking machine teat cup substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 10th day of January, 1928.

ERIC POTTER,

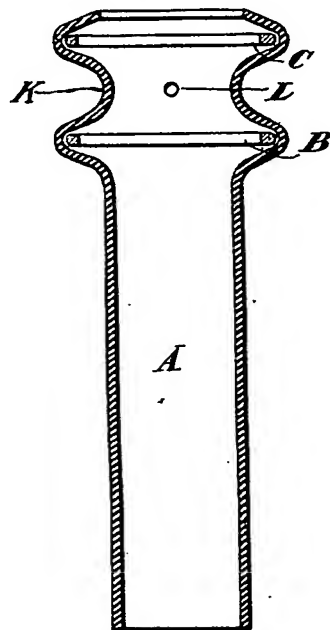
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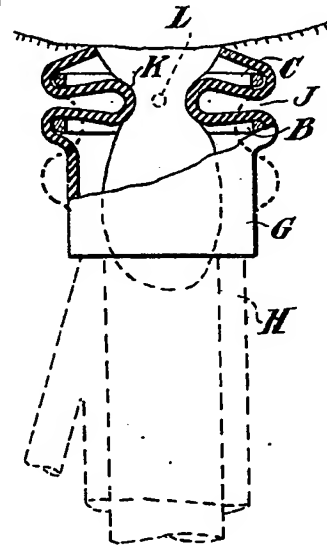
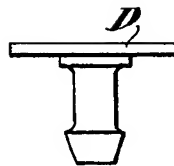
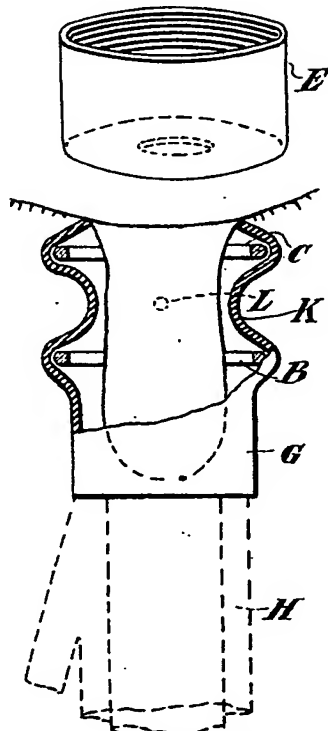
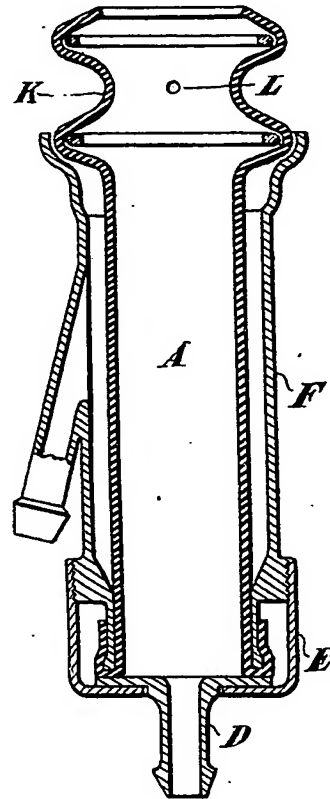
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-FIG. 1-



-FIG. 2-



-FIG. 3-

-FIG. 4-

[This Drawing is a reproduction of the Original on a reduced scale.]

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